



Canada Border
Services Agency

Agence des services
frontaliers du Canada



CBSA Scientific Integrity Policy

Science and Engineering
Information, Science and Technology Branch

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1. **Effective Date**

- 1.1. This Canada Border Services Agency (CBSA) policy takes effect on November 1st, 2019.

2. **Context**

2.1. **Memorandum of Agreements**

This Policy is issued pursuant to the May 15, 2017 Applied Science and Patent Examination (SP) [Appendix D] and the June 1, 2017 Research (RE) [Appendix E] Memorandum of Agreements (MOAs) between the Treasury Board and the Professional Institute of the Public Service of Canada (PIPSC) in Respect of Scientific Integrity.

2.2. **Criteria and Guiding Principles**

This Policy outlines the criteria and guiding principles for conducting and using science at, or on behalf of, the CBSA.

The CBSA is responsible for border enforcement, immigration enforcement, and customs services, which heavily rely on scientific expertise and findings to make informed decisions.

All CBSA employees, including science workers, recognize that their actions can have serious impacts on public safety and security; human, animal, and plant health; on the Canadian economy and trade; and on the environment.

The CBSA has high standards for science that apply to all employees who perform science as well as to external stakeholders who perform science on its behalf. Inappropriate use of CBSA science and scientific outputs by CBSA employees, or those working on CBSA's behalf, is not tolerated by CBSA.

The CBSA scientific activities must therefore adhere to high standards so that the reputation of the Agency and the Government of Canada (GoC) is not damaged. Failure to meet acceptable standards adversely harms the reputations of employees, as well as their respective colleagues, and negatively impacts the public being served by the CBSA. The Agency does not permit the integrity of its scientific programs to be placed in doubt or be hindered, for any reason.



2.3. **Scientific Integrity**

The CBSA is committed to ensuring that CBSA's research, science, and related activities conforms to the highest standards of responsible research conduct and shall strive to follow the relevant and applicable research practices honestly, accountably, openly, and fairly in the development and dissemination of research and scientific knowledge.

Scientific integrity involves the application of concepts of transparency, openness, high quality work, avoidance of conflict of interest, and ensuring high standards of impartiality and scientific ethics.

Employees specifically involved in the use of science shall at all times conform to the expectations of scientific integrity including, but not limited to:

- (i) Ensuring that the significant and meaningful contribution of science workers to government programs, policies, regulations, and decision-making is acknowledged in official publications or communications, including the names and roles of those who made significant contributions to these products and respective activities;
- (ii) Not misrepresenting the science, and related activities, findings of a CBSA science worker; and
- (iii) Appropriately acknowledging scientific work primarily produced by a CBSA science worker.

Employees specifically involved in science related endeavours shall at all times conform to the standards of responsible science. Such standards include, but are not limited to ensuring that:

- (i) All scientific activities (including study design and implementation; recording, analyzing, and interpreting data; and in reporting and publishing data and findings) are conducted with the highest scientific rigour;
- (ii) Complete and accurate records of data, methodologies and findings, including graphs and images, are maintained in a manner consistent with best practices. This curation is essential to the verification and/or replication of the work by others;



- (iii) Referencing and, where applicable, obtaining permission for use of published and unpublished work, including data, source material, methodologies, findings, and images as appropriate;
- (iv) Authorship consent is obtained, from all those and only those who have made a substantial (conceptual and/or material) contribution to, and who accept responsibility for, the contents of the publication or document;
- (v) The contribution of those and only those who have contributed to science, including funders and sponsors, is appropriately described and acknowledged;
- (vi) Any real, perceived or potential conflict of interest is reported and appropriately managed;
- (vii) Information included in applications for funding of science activities is accurate and complete, including information on partners, collaborators and co-applicants from whom permission to be listed has been obtained; and
- (viii) Research involving humans or animals conforms to the Tri-Council principles and procedures as specified in the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans and the Canadian Council on Animal Care Guide to the Care and Use of Experimental Animals respectively.

3. Authorities

- 3.1. This Policy should be read in consultation with the CBSA Code of Conduct, and the CBSA Conflict of Interest Guidelines as well as the Treasury Board Secretariat's (TBS) Values and Ethics Code for the Public Sector (as adopted April 2, 2012), the TBS Policy on Conflict of Interest and Post-Employment, and the TBS Directive on the Management of Communications.
- 3.2. Where there is conflict or incompatibility between this Policy and legislation and/or a provision of any relevant collective agreement, the provisions of the legislation or relevant collective agreement take precedence.
- 3.3. Where there is conflict or incompatibility between this Policy and another mandatory Policy instrument of the TBS (i.e. policy, directive or standard), the provisions of the TBS mandatory Policy instrument take precedence.



- 3.4. Where there is conflict or incompatibility between this Policy and another voluntary Policy instrument of the TBS (i.e. guidelines or tools), the provisions of this Policy take precedence.
- 3.5. The CBSA will maintain a record of all instances of conflict or incompatibility between this Policy and legislation, collective agreements, or TBS policy instruments and/or CBSA policy instruments, and submit this record as part of the performance evaluation in accordance with section 7.8 of this Policy.

4. Objectives and Expected Results

The objective of this Policy is for the CBSA to:

- 4.1. Foster a culture that supports and promotes scientific integrity in the design, conduct, management, review, and communication of science, and related activities.
- 4.2. Increase public, employee, and stakeholder trust in the credibility and reliability of CBSA science, and related activities.
- 4.3. Set out expectations regarding the design, conduct, management, review, and communication of science, and related activities.
- 4.4. Enhance all employees' understanding of the contributions of science to evidence-informed decision-making, enhance their understanding of the inappropriate use of science, as well as enhance their understanding of the role of managers, communication specialists, and science workers in the development of government policy and advice.

The expected results of this Policy are that:

- 4.5. All employees involved in the design, conduct, management, review, use or communication of science, or related activities, understand and conduct themselves in manner consistent with the principles of scientific integrity.
- 4.6. The CBSA be recognized by employees, stakeholders, and the public as a reliable and credible source of scientific information.
- 4.7. As appropriate and to the extent possible, allegations of breach of the principles of scientific integrity as defined in section 6 of this Policy are addressed through a fair, impartial, efficient, confidential, and respectful process.



- 4.8. All employees understand and seek to enhance the contributions of science to science advice, government policy, and evidence-informed decision-making.

5. Application

- 5.1. This Policy applies to CBSA employees who design, conduct, communicate, manage, review or make use of CBSA science, or related activities.

6. Scientific Integrity Principles

The CBSA recognizes that gaining and upholding stakeholder trust with respect to scientific information as well as in the decision-making process that makes use of such information is critical. The Agency is therefore committed to producing, managing, and communicating scientific information with the highest integrity.

- 6.1. Scientific integrity imposes responsibilities and obligations that respect the CBSA Code of Conduct as well as the TBS Values and Ethics Code for the Public Sector.

The CBSA science, and related activities, must also respect the scientific method and conform to the highest standards of the scientific community in order to ensure the integrity of CBSA's contribution to the broader evidence base and knowledge on which science is collectively built.

Accordingly, in designing, conducting, managing, using or communicating science and related activities, science workers shall:

- (i) Achieve and maintain the highest standards of intellectual honesty in the conduct of their scientific activities;
 - (ii) Respect the scientific method;
 - (iii) Subject their science, and related activities, to objective peer review as well as uphold and support the rigorous peer review system on which science is founded; and
 - (iv) Uphold and conform to the best practices, science ethics, and standards of excellence accepted by the wider scientific community.
- 6.2. All employees shall ensure that any scientific products, as well as any associated communications, are impartial and free from political, commercial, client, and stakeholder interference.



Science workers shall also ensure that the conduct of CBSA science, and related activities, and any scientific products, as well as any associated communications, are impartial and free from political, commercial, client, and stakeholder interference.

- 6.3. All employees involved in the design, conduct, management, review, use or communication of science, or related activities, shall avoid conflicts of interest, and ensure that any real, potential or apparent conflict of interest is explicitly recognized, reported, and appropriately managed.

6.3.1. The CBSA Code of Conduct, the TBS Policy on Conflict of Interest and Post-Employment, and the CBSA Conflict of Interest Guidelines reinforce applicable public service values and ethical direction to be incorporated in CBSA science, and related activities, and substantiates the integrity of the public service by prohibiting public servants from improperly taking advantage of their current or previously held position for either the benefit of themselves or others.

6.3.2. All employees involved in the design, conduct, management, review, use or communication of science, or related activities, must make appropriate disclosure to the delegated manager, director, or director general, of affiliation with, or financial involvement in, any organization or entity with a direct interest in the subject matter or materials of the science.

Such disclosures cover the full range of potential interests, including the:

- Direct benefits (e.g. sponsorship of the investigation);
- Indirect benefits (e.g. the provision of materials or facilities); and
- The support of individuals (e.g. provisions related to travel or accommodation expenses in order to attend conferences).

Disclosure should cover any situation in which the conflict of interest may affect, or may be perceived to affect, any decision regarding other people.

6.3.3. Appropriate disclosure must be made to editors of journals, to the readers of published work, and to external bodies from which funds are sought.



6.3.4. Employees have an obligation to disclose at the time of reporting or proposing scientific activities (for example, in an application for funding of research activities), any conflict of interest that has the potential to influence scientific investigations, publications, or funding applications.

6.4. All employees involved in the design, conduct, management, review, use or communication of science, or related activities, shall encourage differing views, interpretations, and opinions on scientific matters as a legitimate and necessary part of the scientific process and, where appropriate, ensure that these differences are made explicit and accurately represented.

6.5. All employees accept the affirmative responsibility to report any breach of these principles as specified in section 7.2.2. of this Policy.

7. Requirements

7.1. Implementation

7.1.1. This Policy will be communicated to all employees by the Deputy Head, and will be applied Agency-wide as indicated in section 5 of this Policy.

7.1.2. The CBSA will continue to develop and implement the additional policies, guidelines, best practices, tools, training, and professional development opportunities necessary to support this Policy.

7.1.3. The CBSA will ensure that contractors and/or collaborators involved in, or providing services in support of, science or related activities are informed of this Policy and are encouraged to comply with its provisions and intent.

7.2 Fostering a Culture of Science Integrity

The CBSA recognizes that in order to foster a culture of scientific integrity, the Agency is required to:

- (i) Instill the virtues that underlie responsible conduct in science, and related activities (section 7.2.1.); and



- (ii) Focus on the procedure for bringing allegations of breaches forward which includes the investigation of these allegations, and the consequences of a finding that a breach has occurred (section 7.2.2.).

7.2.1. **Science Virtues**

Science workers are expected to participate only in work sanctioned by the CBSA through the appropriate Agency approval processes, which conforms to accepted ethical and safety standards, and which the employees are competent to perform.

Aligned with relevant collective agreement provisions as well as the TBS Policy on Learning, Training, and Development science workers and management have a responsibility to perform science related activities for which they are actually assigned, trained, and otherwise qualified.

- 7.2.1.1. The CBSA recognizes the importance of scientific networking with national and international peers, and active participation in the business and organization of relevant scientific and professional societies, which form an important part of ensuring science workers understand and are held to the standards of their communities.
- 7.2.1.2. The CBSA recognizes peer review as being vital to the scientific process, and to the vetting of scientific data, results, and advice.

With the aim of ensuring CBSA science disclosed to the public is of the highest quality, wherever possible, CBSA science workers shall expose their work to an appropriate level of scrutiny and peer review.

This includes following international standards for conducting science as well as applicable forensic standards as established by international scientific communities.



- 7.2.1.3. The CBSA recognizes the importance of the virtues underlying scientific excellence, including intellectual curiosity and honesty, constructive skepticism, meticulousness, avoidance of bias, humility in the discovery and use of science evidence, and the limitations of scientific inquiry.
- 7.2.1.4 The CBSA is responsible for ensuring its learning policies support training, education, and professional development opportunities that allow employees to further their understanding of, and appreciation for, these virtues, the responsible conduct of science, science ethics, and the annotation, management, and archiving of scientific data.
- 7.2.1.5. The CBSA will encourage the development and implementation of a science integrity mentorship program for science workers, whereby mentors exhibiting exemplary science virtues in their conduct and work are paired with more junior employees. Documented training programs in support of accredited science are reinforced practices encouraged by the Agency.

7.2.2. **Breaches of Scientific Integrity**

All employees and management at all levels are expected to appropriately treat science related integrity issues in a fair, respectful, and timely manner.

Any person who may have questions regarding the conduct of a particular piece of science should directly consult with their delegated manager or director for relevant clarification.

The Science and Engineering Directorate within the Agency's Information, Science and Technology Branch (ISTB) is committed to supporting employees and management in this endeavour.



- 7.2.2.1. When issues of scientific integrity arise, all employees, as well as other pertinent stakeholders, directly or indirectly linked to CBSA related scientific activities have an ethical obligation to report any allegation, suspicion or information related to scientific wrongdoing to CBSA management or directly to the CBSA's scientific integrity designated official within the Science and Engineering Directorate responsible for ensuring alleged scientific integrity related issues are appropriately addressed.

Informal dialogue and/or mediation related options can be exercised for scientific resolution purposes. The CBSA's Informal Conflict Management System (ICMS) provides employees and managers within the scientific community with resourceful support for tackling and resolving contentious matters.

As deemed necessary, employees are also encouraged to seek appropriate support for dealing with scientific integrity related situations from other available CBSA sources, such as from the Office of Values and Ethics, and the Senior Officer for Internal Disclosure (SOID).

- 7.2.2.2. Alleged CBSA scientific integrity breaches to the CBSA Code of Conduct and/or to this Policy as a result of scientific activities shall be appropriately reviewed, addressed, and resolved.

Employees associated with alleged breaches may be subject to the CBSA Policy on Internal Investigations into Alleged or Suspected Employee Misconduct. As required, the scientific integrity allegations will be investigated accordingly.

Circumstances whereby scientific misconduct is established, the CBSA will endeavour to ensure applicable scientific integrity breaches are appropriately managed and restored.



This may include reporting findings to organization(s) that funded work related to the scientific endeavours in which such misconduct occurred or which is currently supporting the person(s) found to have engaged in the wrongdoing, and to journals and other applicable media channels through which the science in question was improperly reported.

- 7.2.2.3. The CBSA will endeavor to protect personal information, and otherwise, provide safeguards to ensure that persons may bring forward, in good faith, allegations of breaches of scientific integrity or participate in an investigative process concerning scientific activities without prejudice or fear of reprisal.

As stipulated in the Public Servants Disclosure Protection Act (PSDPA) when CBSA employees or respective stakeholders associated with CBSA's scientific activities have information that could indicate a serious breach of the CBSA Code of Conduct as well as the TBS Values and Ethics Code for the Public Sector they can avail themselves of the respective procedures laid out in the PSDPA by providing a confidential disclosure to:

- Appropriate CBSA management (such as an immediate manager or director);
- The CBSA Office of the SOID; or
- The Public Sector Integrity Commissioner.

- 7.2.2.4. Employees involved in science, in scientific related activities, or in the use or communication of science shall avoid breaches of responsible scientific conduct.

Such breaches include, but are not limited to:

- (i) Fabrication;
- (ii) Falsification;
- (iii) Destruction of Scientific Records;
- (iv) Plagiarism;
- (v) Redundant Publication or Self-Plagiarism;
- (vi) Invalid Authorship or Contributions;
- (vii) Mismanagement of Conflict of Interest;
- (viii) Inaccurate applications for funding including grants and awards;



- (ix) Inaccurate statement of collaborations as well as the identification of co-applicants, collaborators or partners without appropriate knowledge and consent;
- (x) Using information in breach of any duty of confidentiality to industry partners or associated with the review of manuscript or grant related applications;
- (xi) Intentionally omitting reference to the relevant published work of others for the purpose of inferring personal discovery of new information;
- (xii) The lack of appropriate acknowledgment of work primarily produced by another employee;
- (xiii) Interference with any scientific related property of another person, including without limitation the apparatus, reagents, biological materials, writings, data, hardware, software or any other substance including devices used or produced in the conduct of science;
- (xiv) Misrepresentation of science and related activities;
- (xv) Generation of scientific results that are not free from political, commercial or client interference; and
- (xvi) Deliberate inclusion of inaccurate or misleading information relating to scientific activity in curriculum vitae, grant applications, job applications or public statements or the failure to provide relevant information.

7.3. **Openness, Transparency and Timeliness**

The CBSA recognizes and understands the importance of openness and transparency about all elements of science and the scientific process as well as the timely release of scientific information.

It nonetheless also recognizes that there may be legitimate and compelling reasons that may limit the disclosure or availability of scientific information to employees, stakeholders or the public.

7.3.1. All employees shall ensure that scientific information produced by CBSA complies with the TBS Directive on Open Government.



In the absence of clear and compelling reasons:

- (i) No employees shall suppress, alter or otherwise impede the timely release of scientific information; and
- (ii) All employees involved in the design, conduct, management, review, use or communication of science, or related activities shall ensure that scientific information (including that produced by contractors, grantees, or other partners who participate in, or assist with, the design, conduct, use or management of science or related activities) is produced and disseminated in a timely and transparent manner.

7.4. **Public Communication of Scientific Information**

The CBSA recognizes that science workers have the right to express themselves on their validated science and their validated research, while respecting the CBSA Code of Conduct as well as the TBS Values and Ethics Code for the Public Sector.

The CBSA also recognizes the important role of science workers in communicating scientific information to the public. This includes the right to speak publicly as identified in respective collective agreements without being designated as an official media spokesperson.

Employees have many resources available to communicate science, to facilitate their communication of science to the public, to ensure that they fully understand risks, implications, and possible liabilities, and to assist them in determining the types of public communications for which managerial notification is desirable or required, as well as the appropriate timing and form of any such notifications.

It further acknowledges the need for caution and prudence in the public communication of sensitive scientific or technical information as outlined in the TBS Directive on the Management of Communications as well as in existing legal and operational constraints on information disclosure.

The CBSA also recognizes that effective public communication requires certain skills, and that science workers may have different degrees of comfort with public fora.

- 7.4.1. Science workers shall have the right, and are encouraged, to speak about or otherwise express themselves on their validated science, while respecting the Access to Information Act and the CBSA Code of Conduct as well as the TBS Values and Ethics Code for the Public Sector, with or without approval or pre-approval and without being designated as an official spokesperson.



- 7.4.2. In any such public communications, science workers must be familiar with, and respect, any legal restrictions on information disclosure such as privacy rights, matters before the courts, Crown copyright and intellectual property, and cabinet confidences.

They must also respect the CBSA Code of Conduct and the TBS Values and Ethics Code for the Public Sector, and the Access to Information Act.

Unless explicit approval to do so has been given by management, classified, protected or sensitive information shall not be discussed in any public communication.

- 7.4.3. In the case of planned formal public communication events with sufficient lead times (e.g. public talks or lectures), science workers should notify management of the upcoming event and provide a copy of their communication material for information purposes only and without prejudice.

Management is encouraged to consult with the Communications Directorate for appropriate assistance regarding best practices.

In absence of managerial approval of communication content, science workers assume full responsibility and accountability.

The CBSA is under no obligation to support such public communications of the research, science or science related activity as representing the views of the Agency.

- 7.4.4. In the case of formal public communication events with short lead times that effectively preclude prior notification (e.g. media interviews), science workers should notify their reporting manager as soon as possible after the event for information purposes only and without prejudice.

Management is encouraged to consult with the Communications Directorate for appropriate assistance regarding best practices.

In absence of managerial approval of communication content, science workers assume full responsibility and accountability.

The CBSA is under no obligation to support such public communications of the research, science or science related activity as representing the views of the Agency.



7.4.5. Science workers are under no obligation to act as public CBSA subject matter experts or appear in public fora, and may decline any such invitation or request without prejudice, unless explicitly given this task by management.

7.4.6. All employees shall accurately represent and appropriately acknowledge the contributions of both themselves and others to their scientific work.

Any public communication which describes work conducted by science workers should be reviewed and approved by them before dissemination.

In the event that the science workers are not in agreement with the suggested changes, the work will not be attributed to the employee if the employee so requests.

7.4.7. All employees shall ensure that the significant and meaningful contribution of science workers to government programs, policies, regulations, and decision-making is acknowledged in official publications or communications, including the names and roles of those who made significant contributions to these products and respective activities.

7.4.8. Science workers are encouraged to participate in media training provided by the CBSA, but this is not a requirement for them to express themselves about their science.

7.4.9. Where a science worker is speaking in the role of an official spokesperson, they must identify themselves by name and position and speak on the record for public attribution purposes.

7.5. **Dissemination of Scientific Findings (publication and authorship practices)**

The CBSA recognizes that communication among science workers is critical to the on-going development of scientific and scholarly knowledge.

Moreover, the Agency recognizes that its science workers are part of a global community of scientific and scholarly expertise, their contribution to which is critical to maintaining and enhancing the credibility and reputation of CBSA experts, the reputation and credibility of CBSA, and the contribution of CBSA to the knowledge economy.



As with public communications, science workers disseminating or communicating information through scientific media are subject to, and bound by, the Access to Information Act, the CBSA Code of Conduct, the TBS Values and Ethics Code for the Public Sector, and must abide by the TBS Directive on the Management of Communications where it does not conflict with the relevant collective agreements.

Approval to publish will not be unreasonably withheld.

- 7.5.1. Drafts of scientific communications authored by CBSA science workers should be forwarded to their manager and discussed in a timely fashion.

An electronic copy of the final version should be provided to management after acceptance and prior to publication by a publisher or other third party acceptance of the product.

In absence of managerial approval of communication content, science workers assume full responsibility and accountability.

The CBSA is therefore under no obligation to support such public communications of the research, science or science related activity as representing the views of the Agency.

- 7.5.2. Notwithstanding section 7.5.1., CBSA scientific communications that do not contain explicit comments or recommendations on, or explicit discussions about, CBSA operations and capabilities, federal statutory, regulatory or policy matters do not require managerial approval or other relevant personnel approval before being submitted for publication or otherwise communicated or disseminated to relevant audiences.

In absence of managerial approval of communication content, science workers assume full responsibility, and accountability.

The CBSA is therefore under no obligation to support such public communications of the research, science or science related activity as representing the views of the Agency.

- 7.5.3. Communication that includes explicit comments or recommendations on, or explicit discussions about, CBSA operations and capabilities or about federal statutory, regulatory or policy matters does require the approval of managers, supervisors or other relevant personnel before submission for publication or being otherwise communicated or disseminated.



In accordance with section 7.3.1. of this Policy, no CBSA employee shall suppress, alter or otherwise impede the timely release of scientific information in the absence of clear and compelling reasons.

- 7.5.4. Communications that require applicable approval (such as from managers, supervisors or other relevant personnel) may result in respective revisions or editorial changes.

In the event that communication related approvals are contingent upon the incorporation of applicable revisions or changes, and the author(s) are not in agreement with the suggested changes, the work will not be attributed to the science workers if the science workers so requests.

In the event that the communication related approval is withheld by the respective delegated authority, the author(s) shall be informed accordingly in writing, and provided with applicable denial reasons.

The Science and Engineering Directorate can provide assistance in addressing any scientific integrity related matters concerning communications. The Communications Directorate can similarly be consulted regarding communications related best practices.

As required, parties can obtain support from the CBSA's ICMS to appropriately resolve communications related conflicts.

- 7.5.5. In support of sections 7.5.2. and 7.5.3. of this Policy, the Agency adheres to develop guidelines for the purpose of assisting CBSA science workers and management in identifying and distinguishing communications that do and/or do not require applicable delegated approval.
- 7.5.6. The responsible author(s) of any research or scientific communication must ensure the publication guidelines outlined in Annex A are adhered to, as required.
- 7.5.7. In cases where CBSA science workers have provided data or information to be used in a government document (e.g. a report, briefing note, etc.), management and those responsible for preparing the documents are required to consult with the particular science worker concerned in order to ensure the respective data and information is appropriately interpreted and exercised.



7.6. Contributions to the Scientific Community

The Agency recognizes that the participation and contribution of CBSA science workers in the global scholarly community depends upon domestic and international collaboration and partnerships.

Such collaborations and partnerships provide important opportunities for CBSA science workers to leverage their expertise, knowledge, and infrastructure in developing scientific knowledge to the benefit of Canadians.

To this end, the CBSA will:

- 7.6.1. Encourage and facilitate domestic and international research and science collaborations and partnerships between CBSA science workers and the external research, science and development communities in universities and colleges; provincial, territorial or indigenous governments; industry and business; and civil society.
- 7.6.2. Make a reasonable effort to resource participation in relevant scientific and professional societies, working committees, conferences, workshops, and symposia identified by both CBSA science workers and management.
- 7.6.3. Make a reasonable effort to ensure appropriate engagement or participation of CBSA science workers in international science and research-based fora of which Canada is a formal member.
- 7.6.4. Encourage activities related to collaboration with the extramural research and scientific communities, including the appointment of CBSA science workers to adjunct professorships.

7.7. Role of Employees in Science Advice and Evidence-Informed Decision-Making

With respect to the role of employees in science advice and evidence-informed decision-making, the CBSA recognizes that science workers have important and influential roles to play in providing scientific advice:

- (i) That informs federal programs, policy, regulations, and legislation;
- (ii) On the research required to resolve current issues; and
- (iii) To identify emerging scientific and technical issues, research directions and opportunities.

Research and scientific findings are an important source of evidence that must be appropriately considered in evidence-informed decision-making.



The CBSA is committed to developing and deploying transparent mechanisms and procedures for:

- 7.7.1. Gathering, evaluating, and incorporating scientific advice into the CBSA policy and regulatory decision-making process.
- 7.7.2. Engaging employees in the design, development, and evaluation of robust and resilient scientific programs that will be able to meet the future science and technology needs of the Agency.
- 7.7.3. Identifying and prioritizing areas of federal authority for which the current federal science capacity is inadequate in terms of the Agency's particular science requirements or where federal investments in CBSA science undertakings is likely to provide substantial benefits to Canadians.
- 7.7.4. Supporting evidence-informed decision-making training and developmental opportunities for employees who engage in, supervise, manage, support, use or report on scientific activities; analyze, curate or communicate data or information generated by these activities; and/or seek to use information derived from these activities in decision-making.

7.8. **Monitoring and Performance Evaluation**

- 7.8.1. In consultation with stakeholders, the CBSA will design, develop, and implement a monitoring plan for this Policy that will provide information and data on:
 - (i) The extent to which the Policy has achieved its objectives (e.g. policy performance); and
 - (ii) Future Policy requirements and associated supporting instruments (e.g. guidelines, directives, etc.) adjustments, modifications or changes likely to improve Policy performance.

Any such plan must have regard for other government initiatives or circumstances that may affect estimated performance independent of, or in concert with, the Policy.

- 7.8.2. Any plan developed under section 7.8.1. of this Policy must explicitly identify:
 - (i) The performance indicators that will be monitored;
 - (ii) How the data on these indicators will be collected, annotated, and curated;
 - (iii) How performance baselines will be characterized; and



(iv) How changes from baseline will be estimated and evaluated.

7.8.3. A copy of all data and information collected as part of the monitoring plan will be forwarded annually to the Office of the Chief Science Advisor (OCSA), the CBSA National Labour-Management Consultation Committee (NLMCC), and the Governance Committee for Implementation of Government-Wide Scientific Integrity Policy comprised of the Secretary of the Treasury Board, the Chief Science Advisor, and the President of the PIPSC.

8. Responsibilities

8.1. Deputy Head

The CBSA President and its delegates are responsible for:

- (i) Fostering an environment that encourages excellence and integrity in science and related activities, and for promoting a culture of open communication where employees may disclose, in good faith, information concerning breaches of scientific integrity;
- (ii) Ensuring that this Policy is communicated to employees;
- (iii) Monitoring compliance with this Policy within the Agency and taking corrective action as needed;
- (iv) Ensuring appropriate performance evaluation of this Policy; and
- (v) Providing an annual confirmation of the compliance and reporting with this Policy as requested by the Governance Committee (Secretary of the Treasury Board, Chief Science Advisor and the President of PIPSC).

8.2. Lead Authority

The Director General of the Science and Engineering Directorate within ISTB has functional authorities as defined in this Policy and is responsible for monitoring the overall compliance with this Policy and its implementation within the CBSA.

8.3. Directors, Managers and Supervisors

Management is responsible for implementation of this Policy. Such responsibilities include:

- (i) Informing employees about this Policy and ensuring that they are aware of their rights and responsibilities and obligations under the Policy;



- (ii) Ensuring compliance with this Policy, providing to employees information about the processes available to them if they wish to make an allegation under this Policy, and addressing allegations of breach of scientific integrity that are brought to their attention or which they are aware of; and
- (iii) Ensuring that employees are aware of applicable professional development and training opportunities that may be available in support of this Policy.

8.4. **Employees and Stakeholders**

Employees and all persons conducting science or scientific related activities under the auspices of CBSA, involved in the design, conduct, management, review, use or communication of science or scientific related activities, will have primary responsibility for:

- (i) Ensuring their behaviour and conduct conforms to the principles of scientific integrity;
- (ii) Respecting the terms of this Policy;
- (iii) Reporting a suspected breach of scientific integrity as soon as possible; and
- (iv) Participating in good faith in any inquiry or investigation conducted pursuant to this Policy.

9. **Definitions**

Alteration (of a scientific work): Any change in the form or content of a scientific work that may affect the interpretation of the work and/or its implications.

Breach (of scientific integrity): Failure to abide by any of the provisions described in section 2.3, section 6 or section 7 of this Policy.

Classified or Sensitive Information: (a) Information which would be normally considered to be exempt from disclosure under the Access to Information Act; and (b) In the context of this policy sensitive information means privileged or proprietary information, the unauthorized disclosure of which causes unacceptable risk to the health, security, or privacy of Canadians.

Clear and Compelling Reasons (for withholding publication of scientific or research information): Legitimate reasons include, but are not limited to:

- (a) Disclosure of such information is exempt under the Access to Information Act or the Security of Information Act; and
- (b) Technical or technological constraints limit or prevent making the information available.



Client: Any person, institution or organization, whether internal or external to government, who is the recipient and/or user of scientific data, products, services or information, and who is involved with establishing the question or topic of the scientific work in question.

Collaborator: Any person, organization or institution with whom/which a CBSA employee undertakes the design, conduct, management, review or communication of science, or related activities and who/which does not receive direct or indirect remuneration.

Communication (of science): Science communication involves any exchange of scientific information (including scientific results and interpretations thereof, methods, protocols, data, and products) in any form, between or among science workers and the consumers or users of this information, including the public, other scientists or researchers, other government employees, and clients.

Compelling Evidence: Evidence of sufficient strength to convince the decision-maker that it is likely that the claim for which the evidence is adduced is true.

Deputy Head: As defined in section 11(1) of the Financial Administration Act.

Employee: In most cases to be interpreted broadly to cover all employees within a department or agency, all of whom have a greater or lesser role to play in the scientific integrity procedures described in this Policy.

Interference: Any action that alters the impartiality of a science worker, as understood within the CBSA Code of Conduct and the TBS Values and Ethics Code for the Public Sector.

Interference includes not providing decision makers with all the information, analysis and advice that is available and needed, while striving to be open, candid and impartial. Interference also includes alteration or inappropriate suppression of scientific methodology and results or dissuasion of reporting of results by any party, including clients.

Misrepresentation: (a) As in stating or presenting a material or significant falsehood; and (b) As in omitting a fact so that what is stated or presented as a whole states or presents a material or significant falsehood.

Related Activity: Any activity that:

(a) supports science or research (e.g. laboratory operations and management or infrastructure (including information and communication infrastructure));



- (b) uses research or scientific information as an input (e.g. solicitation or preparation of science advice; evaluation of research or scientific evidence); and/or
- (c) involves the curation, communication or archiving of scientific or research data or information.

Science: The pursuit and application of knowledge and understanding of the natural and social world following a systematic methodology based on evidence through application of elements of the scientific method.

Scientific methodology includes the following:

- Objective observation: Measurement and data (possibly although not necessarily using mathematics as a tool);
- Evidence;
- Experiment and/or observation as benchmarks for testing hypotheses;
- Induction: reasoning to establish general rules or conclusions drawn from facts or examples;
- Repetition; and
- Critical analysis; and Verification and testing: critical exposure to scrutiny, peer review and assessment.

Adopted from the Science Council:

- <https://sciencecouncil.org/about-science/our-definition-of-science/>

Scientific Integrity: Is the condition resulting from adherence to concepts of transparency, openness, high quality work, avoidance of conflict of interest, and ensuring high standards of impartiality and scientific ethics.

Scientific Misconduct: Comprises:

- (a) Any science or scientific related activities pertaining to actions or inactions by an employee that is contrary to established policy, standards, procedures or practices of the CBSA;
- (b) It is constituted by a failure to comply with the provisions of this Policy, and without limiting the generalities outlined in section 7.2.2.4. of this Policy (such as fabrication, falsification, plagiarism, or other practices that seriously deviate from those that are commonly accepted within the scientific community for proposing, conducting or reporting science).
- (c) It does not include honest errors or honest differences in interpretation of data;
- (d) Scientific related violations of legislation for which criminal sanctions are applicable;
- (e) Scientific violations of other legislative, rules and regulations administered by the CBSA; and
- (f) Any other science or scientific act which would bring the CBSA into disrepute or effect the Agency's working relationship with other law enforcement partners.



Science Worker: Employees in the SP and the RE occupational groups as specified in their respective collective agreements who are primarily involved in the application of comprehensive scientific and professional knowledge to the planning, conduct, evaluation and management of fundamental research, enhancement of knowledge and understanding, technology development and innovation relevant to defence science, social science, historical research and archival science, mathematics and the natural sciences.

Stakeholder: Either an individual, group or organization who is directly or indirectly impacted by this Policy or otherwise has an interest in the compliance and success of CBSA's scientific integrity requirements and best practices. Examples include science workers, the PIPSC, the CBSA NLMCC, and the OCSA.

Suppression (of a scientific work): The deliberate withholding of a scientific work, or any portion thereof, from publication or dissemination, in the absence of clear and compelling reasons for doing so.

Timely Manner: Within a time frame that is consistent with usual review and approval processes, and consistent with logistical and resource constraints. The CBSA or external collaborators may impose reasonable embargo periods to respect the right of a principal investigator to first publication or protection of intellectual property.

Validated Science: Scientific results that are demonstrated to be reproducible, have been exposed to an appropriate level of peer review, and respect scientific community best practice criteria and expectations for dissemination of scientific results.

10. References

This Policy should be read in consultation with the following identified legislation, direction and instruments.

10.1 Legislation

- Access to Information Act
- Canadian Charter of Rights and Freedoms
- Canadian Human Rights Act
- Copyright Act
- Federal Public Sector Labour Relations Act
- Financial Administration Act
- Government Contracts Regulations
- Legal Deposit of Publications Regulations
- Official Languages Act



- Official Languages (Communications with and Services to the Public) Regulations
- Personal Information Protection and Electronic Documents Act
- Privacy Act
- Public Servant Invention Act
- Public Servants Disclosure Protection Act
- Public Service Employment Act
- Security of Information Act
- Surplus Crown Assets Act
- Trade-Marks Act

10.2 **Related TBS Instruments**

- Collective Agreements
- Guideline for Employees of the Government of Canada: Information Management (IM) Basics
- Contracting Policy
- Directive on the Management of Communications
- Directive on Information Management Roles and Responsibilities
- Directive on Open Government
- Implementation Guide—Policy on Title to Intellectual Property Arising Under Crown Procurement Contracts
- Policy on Official Languages
- Policy on Communications and Federal Identity
- Policy on Conflict of Interest and Post-Employment
- Policy on Information Management
- Policy on Learning, Training, and Development
- Policy on Title to Intellectual Property Arising Under Crown Procurement Contracts
- Procedures for Publishing
- Values and Ethics Code for the Public Sector (as adopted April 2, 2012)

10.3 **Related CBSA Instruments**

- Code of Conduct
- Conflict of Interest Guidelines
- Corporate Identity Standards
- Policy on Internal Investigations into Alleged or Suspected Employee Misconduct

10.4 **Other**

- Canadian Council on Animal Care Guide to the Care and Use of Experimental Animals, Vol. 1 (2nd edition)



- Science Council Definition of Science
- Tri-Council Definition of Research
- Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans

11. Enquiries

For further information on this Policy, contact the Science and Engineering Directorate within the Information, Science and Technology Branch (ISTB).

Annex A: Publication Guidelines

1. Scientific Communication

The responsible author(s) of any research or scientific communication must ensure that:

- a. Approval of all listed authors and contributors is obtained and other contributions are acknowledged, unless science workers wish otherwise;
- b. The work in question is not a republication of original work except when the republication involves translation or dissemination to diverse audiences and is consistent with existing standards on republication;
- c. All contributions to the work are appropriately acknowledged in a manner conforming to accepted standards of the relevant discipline(s) and publication(s);
- d. CBSA authors' federal affiliations are listed, to ensure that publications are retrievable in online searches and discoverable for bibliometric analysis;
- e. The communication is subjected to appropriate independent peer review, and that technical and/or editorial changes that may result from this review are addressed;
- f. The communication is subjected to appropriate security and sensitivity review, and that suggested or required changes that may result from this review are addressed;



- g. Matters related to acknowledgements and official languages is appropriately managed and administered in accordance with the TBS Policy on Official Languages;
- h. The possibility of publishing in *Open Access* journals for scientific and technical papers is explored;
- i. Due diligence is exercised in ensuring all issues related to intellectual property and related matters are resolved;
- j. Understand relevant terms and conditions for publication, including copyright and level of authority required for approvals as outlined in the TBS Directive on the Management of Communications and the TBS Policy on Communications and Federal Identity; and
- k. Science workers should seek credible and reputable outlets for academic publication that conform to established practices and standards of academic publishing, including particularly rigorous peer review practices.

2. **Publication and Authorship**

The responsible author(s) of any publication and authorship must ensure that:

- a. The copyright of all scientific findings under the direction of CBSA are compliant with the Copyright Act, and it is understood that it belongs to the Crown, and shall not be reported to the public media without appropriate approvals and acknowledgements;
- b. Publications respect accepted best practices for authorship and contain appropriate reference to the contributions made by all participants in the relevant science. Participation solely in the acquisition of funding or the collection of data does not justify authorship. General supervision of the group of science workers is not sufficient for authorship;
- c. While one co-author (by agreement amongst the authors) can be nominated as the responsible or principle author for the whole scientific output, all authors are responsible for record keeping regarding the scientific output;



- d. Contributions to science made by any persons, which are insufficient for them to be included as authors, should nevertheless be recognized in any publication derived from that science. Convention demands that individuals and/or organizations providing facilities should similarly be acknowledged. Publications must include information on the sources of financial support for the scientific work. Financial sponsorship that carries an embargo on such naming of a sponsor should be avoided;
- e. Publications that are substantially similar to another publication derived from the same scientific work must contain appropriate reference to the other publication. CBSA employees who submit substantially similar work to more than one publisher are to disclose that fact to the publishers at the time of submission;
- f. Confidentiality provisions related to publications are applied accordingly in circumstances whereby the CBSA has made or given confidentiality undertakings to respective third parties or confidentiality is required for the purpose of protecting intellectual property rights. This would be in accordance with the TBS Procedures for Publishing.

It is the obligation of CBSA employees to enquire at an early stage as to whether confidentiality provisions apply and it is the responsibility of the delegated manager and director to inform employees of their obligations with respect to these specific provisions;

- g. Publications prepared by CBSA employees, within the scope of their employment with the Agency are to be maintained and retained by the department in accordance with the timelines outlined in the TBS Policy on Information Management, the TBS Directive on Information Management Roles and Responsibilities, and the TBS Guideline for Employees of the Government of Canada: Information Management (IM) Basics; and
- h. At the CBSA's discretion, recognition of authorship will be given where practicable in departmental publications. When an employee acts as a sole or joint author or editor of a publication, the authorship or editorship shall normally be acknowledged on such publication. Where the CBSA wishes to make changes in a



publication with which the author does not agree, the employee shall not be credited publicly if the employee so requests.